

LOKOMOTIVA SERIJE 2 041

LOCOMOTIVE SERIES 2 041



Tehnička svojstva

Karakteristike lokomotive poslije rekonstrukcije		
Širina kolosijeka		1435 mm
Raspored osovina		B'o B'o
Dužina lokomotive mjerena preko odbojnika		14740 mm
Profil		UIC 505-1
Promjer kotača (kruga kotrljanja), nov/istrošen		1100/1020 mm
Minimalni radijus zavoja prolaza lokomotive		R55 m
Masa lokomotive u službi		67 t
Tip dizelskog motora		CAT 3508 B SCAC
Snaga dizelskog motora		607 kW
Maksimalna vučna sila na obodu kotača kod pokretanja		170 kN
Najveća brzina lokomotive		80 km/h
Kritična brzina lokomotive		14,5 km/h
Trajna snaga glavnog generatora		500 kW
Najveći broj okretaja DM		1500 o/min
Najmanji broj okretaja (prazan hod) DM		700 o/min
Dužina sanduka		13500 mm
Kočna masa lokomotive	G	57 t
	P	71 t
Razmak između krajnjih osovina lokomotive		10100 mm
Zapremina rezervoara za gorivo		2500 l

Technical data

Locomotive characteristic after reconstruction		
Track gauge		1435 mm
Axle arrangement		B'o B'o
Locomotive length over bumpers		14740 mm
Locomotive profile		UIC 505-1
Wheel diameter (rolling circle), new		1100/1020 mm
Min. curve radius for locomotive to pass through		R55 m
Locomotive mass in operation		67 t
Type of diesel engine		CAT 3508 B SCAC
Power of diesel engine		607 kW
Starting tractive effort		S170 kN
Max. speed of locomotive		80 km/h
Critical speed of locomotive		14,5 km/h
Traction power		500 kW
Max. engine speed		1500 RPM
Min. engine (idle) speed		700 RPM
Carbody length		13500 mm
Brake-weight of locomotive	G	57 t
	P	71 t
Distance between end axles of locomotive		10100 mm
Volume of fuel tank		2500 l

DIZELELEKTRIČNA LOKOMOTIVA SERIJE 2041-100

Dizelelektrična lokomotiva serije 2041-100 je nastala modernizacijom lokomotive 2041-000 stare oko 40 godina. Od izvorne lokomotive je sačuvan temeljni okvir i okretna postolja dok su svi ostali dijelovi i sustavi potpuno novi ili značajno modificirani. Na lokomotivi je ugrađen novi dizelski motor CAT3805B sa certifikatom prema UIC623 normi. Potpuno novi sustav elektroničkog upravljanja se temelji na računalu GLC800 koje je Gredeljev proizvod verificiran u praksi i u skladu s važećim normama. GLC800 u sebi objedinjava sve funkcije upravljanja glavnim i pomoćnim pogonom, upravljanje dizelskim motorom i sve zaštite svakog od lokomotivskih sustava. Sučelje između strojnog osoblja i lokomotive (MMI) je značajno pojednostavljen, a istovremeno strojno i servisno osoblje može putem PC panela jednostavno pristupiti svim statističkim i dijagnostičkim alatima u sustavu u realnom vremenu. Komunikacija GLC800 prema strojnom osoblju je u obliku tekstualnih poruka ili znakovima prema UIC640. Sustav upravljanja je izveden na naponskoj razini 24VDC i napaja se iz lokomotivskih NiCd baterija. Sustav pomoćnih pogona (ventilatori, kompresor, hlađenje dizelskog motora...) se napaja iz VVVF (varijabilni napon i frekvencija) upravljivih statickih pretvarača ukupne instalirane snage 80kVA. Ovakav sustav pomoćnih pogona omogućava vrlo preciznu regulaciju rada svakog pojedinačnog segmenta pomoćnih pogona u skladu s trenutnim potrebama u tom sustavu te time osigurava uštedu energije i najpovoljnije radne uvjete za svaki lokomotivski sustav. Dodatno je lokomotiva opremljena sustavom SAPAZ (sustav automatskog pokretanja i zaustavljanja dizelskog motora) koji u određenim situacijama automatski zaustavlja dizelski motor i aktivira predgrijač kako bi se dizelski motor održavao na idealnoj radnoj temperaturi i lokomotiva bila trenutno spremna za pokretanje i uključivanje u rad. Prema potrebi, ovaj sustav (SAPAZ) će povremeno i automatski pokretati dizelski motor radi punjenja baterija ili sustava kočnice. Primjena ovog sustava, značajno umanjuje broj sati rada u praznom hodu te slijedom toga i troškove goriva, maziva, održavanja....

Lokomotiva je opremljena LED unutrašnjom rasvjetom i automatiziranim vanjskom rasvjetom prema TSI i UIC preporukama.

Primarna namjena lokomotive je teška manevra i vuča lakših teretnih vlakova, a osovinski pritisak od 16,5 tona osigurava mogućnost primjene i na sporednim i industrijskim kolosijecima, a nova tehnička i tehnološka rješenja doprinose značajnom smanjenju troškova rada i troškova održavanja uz istovremeno povećanje pouzdanosti lokomotive.



DIESEL-ELECTRIC LOCOMOTIVE SERIES 2041-100

Diesel electric locomotive series 2041-100 was created in modernization project of original 40 years old 2041-000 locomotive. Only main frame and bogies were reused from the original locomotive while all other parts and systems are completely new or extensively modified. Locomotive is equipped with a new CAT3508B diesel engine (certified according to UIC623). Completely new control and governing system is based on GLC800 locomotive computer: GLC800 is Gredelj's product that was verified in service and is in accordance with the appropriate EN standards. GLC800 combines all control and governing functions for all locomotive main and auxiliary systems, diesel engine control and all locomotive protection systems. MMI (man machine interface) is significantly simpler while easier to use by service personnel or engine driver. MMI through PC panel displays enables statistical and real time monitoring and system analysis. Communication from GLC800 to engine driver is either through text messages or via pictograms and symbols (according to UIC640). Control system is based on NiCd 24V locomotive batteries. Auxiliary systems (like fans, diesel engine cooling, air compressor,...) are all driven by 80kVA VVVF (variable voltage variable frequency) static inverters. This type of auxiliary systems supply enables very precise individual control for each locomotive system thus reducing unnecessary energy usage and the best working conditions for every locomotive component. Additionally, the locomotive is equipped with SAPAZ (automatic diesel engine start and stop system). This system stops the engine in periods of prolonged idling and starts the preheater to keep the engine on ideal temperature and ready for starting. As necessary this system will restart the engine to charge the batteries or fill the air tanks. Implementation of this system significantly reduces number of diesel engine work hours, fuel costs, engine oil use and maintenance costs.

Locomotive is equipped with LED internal lights and automated signal lights according to TSI and UIC recommendations.

This locomotive is suitable for heavy shunting duty as well as light freight haul. Axle load of only 16,5 metric tonnes ensures that the locomotive can be used on main as well as on industrial sidings. New technical and technological solutions significantly reduce the operating and maintenance costs while increasing locomotive reliability in service.